Claims

This listing of claims will replace all prior versions, and listings of claims in the application:

1-44 (cancelled).

45. (new) An article comprising a computer-readable storage medium which stores processor executable instructions, the article comprising instructions which when executed cause a processor to:

assign received network packets to respective receive threads, each of the receive threads to parse respective headers of the respective network packets and perform a lookup based on data in the respective headers of the respective packets and enqueue the respective packets in respective transmit queues, wherein the plurality of receive threads comprise receive threads provided by multiple programmable processors each having multiple program counters corresponding to respective threads provided by the respective programmable processors, wherein the assigning comprises accessing data associating respective receive threads provided by the respective programmable processors with respective Ethernet ports; and

process the received network packets with the respective assigned receive threads.

46. (new) The article of claim 45, further comprising instructions which when executed cause a processor to:

assign the network packets to a single thread among a plurality of transmit threads, wherein the plurality of transmit threads comprise transmit threads provided by the multiple programmable processors, the transmit threads to forward the network packets to a forwarding port based on the receive thread lookup based on data in the respective headers of the respective packets.

47. (new) The article of claim 46, further comprising instructions which when executed cause a processor to:

provide a transmit arbiter thread that selects a one of the transmit queues to service and performs the assigning of a network packet to a one of the plurality of transmit threads.

48. (new) The article of claim 45, wherein the number of receive threads exactly equals the number of Ethernet ports.

49. (new) The article of claim 45, wherein each of the respective receive threads is associated with only a single one of the Ethernet ports

50. (new) The article of claim 45, further comprising instructions that when executed cause a processor to:

store status information of the receive threads, the status information identifying, at least, whether a receive thread is ready to process a new network packet.

51. (new) The article of claim 45, wherein the received network packets are received in packet portions and further comprising instructions to identify the location of the packet portions within the packet, wherein the location comprises at least one of a start of packet portion and an end of packet portion.

52. (new) The article of claim 45, wherein a respective receive thread writes a 2-bit message into a thread-relative position within a 10-bit Command and Status Register indicating the receive thread is done processing a packet.

53. (new) An method, comprising:

assigning received network packets to respective receive threads, each of the receive threads to parse respective headers of the respective network packets and perform a lookup based on data in the respective headers of the respective packets and enqueue the respective packets in respective transmit queues, wherein the plurality of receive threads comprise receive threads provided by multiple programmable processors each having multiple program counters corresponding to respective threads provided by the respective programmable processors, wherein the assigning comprises accessing data associating respective receive threads provided by the respective programmable processors with respective Ethernet ports; and

processing the received network packets with the respective assigned receive threads.

54. (new) The method of claim 53, further comprising:

assigning the network packets to a single thread among a plurality of transmit threads, wherein the plurality of transmit threads comprise transmit threads provided by the multiple programmable processors, the transmit threads to forward the network packets to a forwarding port based on the receive thread lookup based on data in the respective headers of the respective packets.

55. (new) The method of claim 54, further comprising:

providing a transmit arbiter thread that selects a one of the transmit queues to service and performs the assigning of a network packet to a one of the plurality of transmit threads.

56. (new) The method of claim 53, wherein the number of receive threads exactly equals the number of Ethernet ports.

57. (new) The method of claim 53, wherein each of the respective receive threads is associated with only a single one of the Ethernet ports

58. (new) The method of claim 53, further comprising:

Storing status information of the receive threads, the status information identifying, at least, whether a receive thread is ready to process a new network packet.

59. (new) The method of claim 53,

wherein the received network packets are received in packet portions and

further comprising including an identification of the location of the packet portions with the packets, wherein the identification of the location comprises at least one of a start of packet portion and an end of packet portion.

60. (new) The method of claim 53, wherein a respective receive thread writes a 2-bit message into a thread-relative position within a 10-bit Command and Status Register indicating the receive thread is done processing a packet.